Structural Essay · July 2026 · Standalone Volume

The Gendered Amputation

Anatomy of the Closed Door

◆ Asymmetry Disclosure — Applies to This Entire Volume

This volume does not claim to narrate the intimate experience of women in IT infrastructure. It was modelled by a male architect, audited contradictorily by two artificial intelligences, drawing on verified public data — official statistics, technical documentation examined directly, already-published scientific literature. It does not document pain. It documents an architecture of exclusion, quantified wherever possible, and proposes concrete solutions explicitly owned as such — proposals, not established norms. This volume is an open system awaiting real-world corrections, from every woman working in the field who reads it.

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The Thesis

A door closed at several points, never a single lock

The absence of women in IT infrastructure — systems, networks, operations — does not have a single cause. It is produced by a chain of distinct mechanisms, active at different ages and different moments of a career, none of which alone would explain so marked a deficit, but whose sum produces a measurable result: in certain infrastructure fields, the proportion of women remains under 5%, while it approaches 50% elsewhere.

◆ What this volume demonstrates, in order

First, that the most spontaneous explanation — the physical demands of the job — does not survive scrutiny. Then, that a series of concrete, documented mechanisms operate at different moments: the material standard of equipment, the vocabulary of technical documentation, the career trajectory on offer, the cumulative cost of staying, the precise moment of an incident where technical authority is proven, and the difficulty of reaching real decision-making positions.

◆ What this volume then proposes

Facing this diagnosis, a four-pronged architecture of solutions: an early pedagogical intervention, a career continuity guarantee around maternity, a professional reconversion programme built on already-existing mechanisms, and a method for tracking real authority within organisations. Every proposal in this final part is owned as a proposal of this volume — not as an already-established norm.

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Part II — The Demonstration

Six documented mechanisms, from diagnosis to critical incident

This part establishes, mechanism by mechanism, what produces the absence of women in IT infrastructure. Each section relies on public data, industry standards, or already-published scientific literature — never on an unverified theoretical proposal.

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II.1

A QUANTIFIED DEFICIT, NOT AN IMPRESSION

Two women out of twenty, consistently — and the physical excuse that collapses

In general engineering programmes, gender parity is close to 50/50. In Systems & Network training specifically, two women out of twenty, consistently, across several years and several institutions. This deficit is concentrated, not general: it does not appear in other technical fields. The most spontaneous explanation — the physical demands of the job — does not survive a documented counter-example: when construction machinery could not reach certain villages in the Moroccan Atlas, it was women who carried cinder blocks on their backs to build their villages' mosques. Physical resilience is contextual and cultural, not genetically gendered.

◆ Three mechanisms that explain the concentration, once the physical explanation is set aside

The cultural representation of the profession, built as masculine in the collective imagination well before the age of career choices. The absence of visible female role models, which is self-perpetuating: few women in the field produces few role models, which discourages new entrants. The implicit culture of training materials, written and illustrated mostly by men, with implicitly masculine examples — a blind spot more than a conscious hostility.

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II.2

A MATERIAL STANDARD NEVER TESTED ON A DIVERSE BODY

The rack, the noise, and protective equipment — engineering figures

The EIA-310 standard, which fixed the dimensions of the standard 19-inch rack since the 1960s, was not designed with a diverse human body in mind. A 42U rack measures 1.86 metres; the top units require a full arm extension above shoulder level. A fully loaded 1U server weighs 12 to 18 kg, a 4U sometimes exceeds 35 kg — beyond the threshold recommended by European occupational safety standards (EN 1005-2) for repeated manual handling, regardless of the handler's sex.

◆ The work environment as a physiological filter

ASHRAE datacenter standards recommend an operating temperature between 18 and 27°C at equipment intake — the cold aisle where the technician works is often colder still. Noise levels frequently exceed 85 decibels, the threshold beyond which European regulation mandates hearing protection.

◆ A documented bias in protective equipment, outside this volume

The US Occupational Safety and Health Administration (OSHA) has documented, in publications independent of this volume, that personal protective equipment sizing across several industries — anti-static gloves, safety footwear — is historically designed around average male sizing, with female options often added later.

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II.3

A DIRECTLY VERIFIABLE DOCUMENTARY BIAS

First names in technical documentation — a direct examination, not an impression

The official identity and access management documentation of a major cloud provider (AWS IAM) was examined directly. Female first names (Jane, Alice, Adele, Patricia, Chloe) systematically appear in examples of basic user creation and restricted rights. Male first names (John, Bob, David, Jim, Chris, Eli) dominate examples of administrator roles, AssumeRole, advanced permissions. The canonical example of a security problem features "John Doe" creating the risk — "Jane Doe" passively inheriting it.

◆ What this signal proves and does not prove

This documentation bias does not prove deliberate intent to exclude. It proves silent normalisation: the engineer learning to "assume an admin role" learns that its name is John. A thousand engineers learning this form a collective mental representation, which then informs recruitment and team culture, with no conspiracy required.

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II.4

A CAREER TRAJECTORY THAT MOVES AWAY FROM TECHNICAL DECISION-MAKING

The trap of promotion toward abstraction

Public industry surveys — Stack Overflow, CNCF — document a higher concentration of women in product management and design roles, and their decline in systems administration, network, and SRE roles, where the rate remains in low single digits from one survey to the next. A typical observed path: after 2 to 4 years in a technical role, an offer to transition to a Scrum Master, Delivery Manager, or FinOps Analyst role, presented as a natural promotion of responsibility.

◆ Why this transition is an amputation, not necessarily a promotion

A genuine promotion expands technical decision authority. In any organisation, a small number of people actually hold the final say on architecture decisions — under varying titles depending on the organisation: technical lead, architect, technical director. Moving to process or financial roles without retaining this decision authority does not expand it: it replaces it with a different kind of power, often less negotiable in salary terms on the specific infrastructure market.

◆ The particular case of FinOps

FinOps requires a genuine understanding of cloud billing, but neither the ability to diagnose a network outage at 3am, nor VLAN configuration. It is an extension of cost analysis — not of technical decision authority itself.

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II.5

The cumulative cost of staying — four documented components

An attrition rate never published at sector level with this level of detail

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◆ Harassment and the sole-witness burden

Several independent studies of the tech sector document higher harassment rates in deep technical roles than in administrative roles. On a team with a single woman, this profile carries an additional cognitive load — seeing her performance perceived as representative of an entire group — quantifiable through token theory (Kanter, 1977), absent for the majority profile on the same team.

◆ Informal network and accumulated micro-frustrations

A share of technical information and opportunity circulates through informal channels — lunch, post-meeting chat — statistically excluding whoever does not share the majority group's social affinity. Repeated micro-frustrations (presumption of incompetence, repeated questioning of experience) do not constitute harassment in the legal sense, but accumulate without triggering an alert in any monitoring system.

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II.6

The moment technical authority is proven — not declared

The major incident, he-peating, and the author of the final report

Real technical authority is largely built during major incidents (Sev-1) — a moment of timed pressure, unannounced, before witnesses, leaving a complete, timestamped written record (chat channel, post-mortem, attribution of the resolution command). The term "he-peating" was first publicly documented in 2017, in a scientific conference context, and has since been picked up in specialised press: a woman proposes a solution, it is ignored, then a man rephrases the same proposal minutes later and receives credit for it.

◆ The incident's pace as fertile ground

Urgency reduces attentive listening time and increases reliance on quick heuristics about who to prioritise listening to — heuristics that lean on pre-existing perceived authority, itself shaped by the mechanisms of the previous section.

◆ The tacit division of roles during the incident

An incident mobilises two distinct functions: technical diagnosis and execution of recovery commands on one hand, incident communication on the other. The post-mortem almost always records who executed the final command — rarely who kept the team coordinated. Often, it is the person who handled communication who writes the final report herself, thereby etching into institutional history the narrative of the rescue credited to whoever simply rephrased her proposal.

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II.7

WHY TRANSMISSION STOPS BEFORE THE TOP

MENTORSHIP AND SPONSORSHIP — A DISTINCTION DOCUMENTED FOR DECADES, RARELY APPLIED IN INFRASTRUCTURE

Institutional talent management literature has long distinguished two acts often conflated. Mentorship is technical skill transfer — "here is how you diagnose a network fault" — gender-neutral by nature: it passes from senior to junior regardless of either party's gender. Sponsorship is a different institutional political act: "I recommend this person for this vacancy, and I stake my name and reputation behind this recommendation."

◆ WHY SPONSORSHIP REMAINS RARER FOR WOMEN, WITHOUT ANY CONSCIOUS INDIVIDUAL DECISION

Mentorship is a low-risk investment for the senior — they risk only their time. Sponsorship is a high-risk investment: the senior stakes their reputation if the sponsored person fails. This sponsorship statistically forms within the same informal networks documented in Section II.5 — the very same networks that already structurally exclude women from the circulation of information and opportunity.

◆ AN INVISIBLE DEFICIT IN TITLE STATISTICS

Many organisations publish statistics on the percentage of women among "senior engineers" — but this title does not distinguish who actually holds final decision authority over architecture from who carries the title without this specific power. A company can display an excellent percentage at this title level while keeping final decisions in the hands of a very small number of people carrying different titles — technical director, chief architect — with no public statistic ever revealing this.

◆ WHAT THIS SECTION ESTABLISHES, AND WHAT IT DOES NOT

This section establishes that the mentorship/sponsorship distinction is documented in management literature, and that the informal-exclusion mechanism already demonstrated in II.5 logically applies to sponsorship. It does not establish a precise figure on the sponsorship gap in infrastructure specifically — this data is not published anywhere today with sufficient detail, which is itself a gap worth filling.

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Part III — The Solution

Four proposals of this volume — owned as such, not as norms in force

Facing the six mechanisms demonstrated in Part II, this part proposes a four-pronged architecture of solutions at four ages of a professional life: school, career entry, maternity, and reconversion. Every proposal is a recommendation of this volume — none describes an existing generalised practice, unless explicitly stated otherwise.

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III.1

Intervening before age 12 — an early-intervention proposal

A 35-euro kit and a teacher who decides to stop waiting

The bifurcation that produces the underrepresentation observed in Part II has an identifiable point of origin: the classroom at age 12, the child who has never seen a machine obey their instructions. In the absence of physical hardware in the classroom and an adult explicitly saying "you too can make this work", a pedagogical void sets in where stereotypes fill the space — boys occupy the available hardware, girls turn to what is left.

◆ The proposal — a 35-euro physical object, not an institutional programme

This volume proposes that a teacher, with a 35-euro programmable microcontroller kit and the financial support of a few colleagues, structure an activity where every pupil — girl or boy — has a moment alone in front of the machine. This is not an awareness programme, nor an institutional scheme: it is a direct material intervention, reproducible without public budget or hierarchical approval.

◆ Why this proposal is not a diversity policy

No communication campaign corrects a normalisation that sets in early through silent repetition. The response must operate at the same level: a direct material intervention, before the mental representation has hardened — not a discourse after the fact.

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III.2

Preventing maternity from becoming a career rupture

A continuity proposal — removing the rupture rather than repairing it afterward

Maternity is a biological function from which society as a whole benefits collectively, and whose career cost is today disproportionately borne by the women who bear it. Two concrete problems follow: the loss of team knowledge during absence, measurable like any unplanned departure of a technical expert; and the documented risk on return — role degradation disguised as reorganisation, misalignment with a team that has evolved without the person concerned.

◆ The proposal — link maintenance at the employee's exclusive initiative

This volume proposes a continuity principle resting on three inseparable conditions: the possibility, at the employee's exclusive initiative and no one else's, to stay informed if she wishes, without this ever becoming an obligation; full maintenance of pay and associated rights throughout the leave; and the structural impossibility of role degradation, since there would never have been a rupture — only a continuation at reduced intensity.

◆ Why initiative must remain one-directional

Any request coming from the employer would immediately turn this possibility into informal pressure disguised as an opportunity to stay connected. The proposal only works if the door remains open from one side only.

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III.3

A RECONVERSION PROGRAMME BUILT ON ALREADY-EXISTING MECHANISMS

3% OF WOMEN IN TELECOMS-NETWORKING — A QUANTIFIED DEFICIT, TOOLS ALREADY AVAILABLE

INSEE and France Travail data are verified and sourced: 3% of women in telecoms and network infrastructure roles, against 24% across digital professions overall and 50% in other professions. The parallel with the metallurgy industry — 23% women, 76,000 unfilled positions, a public gender-mix plan targeting 33% by 2033 — establishes that a self-aggravating shortage is resolved by activating an existing talent pool, not by waiting for it to grow on its own.

◆ REAL FRENCH MECHANISMS, NOT CREATED BY THIS VOLUME

For women reconverting after age 30, the professionalisation contract is an already-existing lever, with no age limit beyond 26, requiring no exception. Two titles registered in the National Register of Professional Certifications are directly available, with 100% funding by the sector's approved joint collection body for one of them.

◆ THE LOCK TO LIFT — AUTOMATED RECRUITMENT FILTERS

The non-linear career paths typical of a reconversion after 30 are statistically filtered by automated recruitment systems before any human reading — a side effect of sorting designed for general use, not deliberate exclusion, but with a disproportionate impact on this population.

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III.4

Adapting the principle outside France, without exporting the legal tool

The professionalisation contract does not export — the principle it carries does

The French professionalisation contract does not exist outside the French legal framework. Any literal export attempt will fail. What deserves transfer is not the tool, but the principle it carries: funding dedicated to reconversion toward infrastructure, a labour-market-recognised certification, and a paid path rather than an unpaid internship.

◆ Real structural equivalents, already in place elsewhere

In the United States, the federal Registered Apprenticeship programme funds paid apprenticeship, including in IT sectors — with a decisive structural difference: it requires an employer's prior agreement, unlike the French individual right. In the United Kingdom, the Apprenticeship Levy, collected from large employers, funds certified technical apprenticeship programmes under the same institutional logic.

◆ The only universally transferable element — neutral certification

Linux Foundation (LFCS, LFCA) and CNCF (CKA) certifications are internationally recognised, with uniform exam standards independent of the candidate's country. An international reconversion programme can begin immediately with this goal, without waiting for local funding questions specific to each jurisdiction to be resolved.

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III.5

Making real authority visible, and documenting sponsorship

Two directly applicable measures, without waiting for any new title to be created

Facing the sponsorship deficit documented in II.7, two measures are applicable today, within the existing organisational framework of any company, without waiting for the creation of a formal title or rank that exists in no organisation to date.

◆ Measure 1 — Track real decision power, not just title

Any organisation can, starting today, identify by name who actually holds the final say on its architecture decisions — whatever title they carry — and publish the gender breakdown of this small group, distinctly from generic title statistics that mask this reality.

◆ Measure 2 — Document sponsorship as an act distinct from mentorship

An organisation can ask its senior technical staff to explicitly document, whenever a position with real decision authority opens, whether they actively recommended a female candidate by staking their reputation — and make this figure visible, separately from general mentorship figures that do not measure the same thing.

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Closing

A chain of mechanisms, an architecture of responses

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◆ The Thesis in One Sentence

The door is not closed at a single point. It is closed at school, in equipment standards, in documentation vocabulary, in career trajectory, in the cumulative cost of staying, in the moment of the incident, and in access to sponsorship. None of these closures alone explains everything. Together, they explain the figure.

◆ Open Call — Human Pull Request

This volume is an open-source system awaiting real-world corrections. We explicitly invite every woman working in IT infrastructure to document her own path in light of these six mechanisms, and to correct, contradict, or enrich the four proposals of Part III.

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You do not fix a closed door by discussing its existence. You fix it by documenting every hinge, one by one, until it opens.

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